

REMARKS

Claims 1-9 and 11-15 are currently pending. Claim 10 is currently cancelled and the subject matter thereof is incorporated into claim 1. Claims 1-5, 7, and 12 are currently amended. Support for these amendments can be found, for example, in paragraphs [0005] and [0009]. No new matter is added.

Claim Objections

Claims 1-5 were objected to for the use of “first opaque layer” and “second semi-opaque layer.” Claim 1 has been amended thus this objection is believed to be moot.

Claim Rejections - 35 USC 112

Claims 2, 12 and 13 were rejected under 35 USC 112, 1st paragraph, as allegedly failing to comply with the written description requirement. Specifically, the Examiner objects to the term “the same.” Although the Applicants do not agree, claims 2 and 12 have been amended to replace “the same” with “corresponding,” thus this rejection is believed to be moot.

Claim Rejections - 35 USC 102/103

Claim 6 is rejected under 35 USC 102(b) as allegedly anticipated, or in the alternative, under 35 USC 103(a) as obvious over US 7,335,399 to Bolton et al. (“Bolton”). Bolton describes a wood substrate having an opaque base coat and a water-based graining coat. The Examiner interprets claim 6 as a product by process claim, however Bolton fails to disclose either the process or the product of claim 6. Claim 6 recites a particle size distribution, wherein the spherical polymer particles in the emulsion paint show a particle size distribution in which 3-10% of the particles have an average particle size between 63-90 micrometers and 25-40% have a particle size between 40-63 micrometers. The Examiner admits that “US’399 is silent as to the particle shape or size distribution” (Office Action, page 8). Applicants note that Bolton does not disclose an emulsion paint comprising spherical polymer particles at all, let alone any specific particle size distribution. Bolton also fails to disclose a first coating of a water-borne emulsion of a *styrene* acrylic copolymer. The alleged first coating in Bolton contains 40 to 80% of a cross-linkable acrylic polymer, but Bolton teaches that it is preferably a *styrene free* acrylic

copolymer (col 7, lines 31-33), thus teaching away from a styrene copolymer. Thus, Bolton does not disclose or suggest all the limitations of claim 6.

Claim Rejections - 35 USC 103

Claims 1, 3 and 4 are rejected under 35 USC 103(a) as allegedly obvious over Bolton in view of US 5,498,670 to Aoyama et al. (“Aoyama”). As discussed above, Bolton does not disclose an emulsion paint comprising spherical polymer particles at all, let alone any specific particle size distribution. The Examiner attempts to use Aoyama to cure this deficiency.

Aoyama describes a coating composition including crosslinked spherical fine particles which are comprised of a vinyl-modified polyurethane and which have a particle diameter from 0.5 to 2000 μm (column 2, lines 11-17). The Examiner admits that “US’670 fail to teach a particle size distribution in which 3-10% of the particles have an average particle size between 63-90 microns and 25-40% have a particle size between 40-63 microns” (Office Action, page 9). Aoyama states that the “crosslinked spherical fine particles to be used for the coating composition should have an average particle diameter of 1-100 μm , preferably 3-70 μm , and more preferably 5-50 μm ” (col 13, line 8-10). To supplement these disclosed ranges, Aoyama teaches that for a given coating composition containing specific polymeric particles, those particles are to have a *narrow* particle size distribution about those average values (column 11, lines 41 to 55). This is supported by the *extremely narrow* particle size distributions of the enabled embodiments of Aoyama (Examples 1-1 to 1-22). In *all* those Examples, greater than 75 vol.% of the particles have diameters falling within 10 μm of the average particle size. In the *majority* of those Examples, greater than 88% of the particles have diameters falling within 10 μm of the average particle size.

In response to the Examiner’s comments regarding the teaching away (Office Action, page 2), Applicants provide further clarification. Aoyama describes a “former method [that] tends to give rise to crosslinked spherical fine particles composed of particles of large diameters and small diameters (or having a broad particle size distribution),” which is usually undesirable (col 11, lines 30-37). Rather, “[t]he latter method [that] tends gives rise to crosslinked spherical fine particles composed of particles of *uniform diameter*...is usually *desirable*” (col 11, lines 33-37, emphasis added). Thus, Aoyama also teaches away from having a large percentage of

particles of the larger size, since the particles are most preferably 5-50 μm , which is smaller than the particle range claimed for 25-40% of the particles.

In the present invention, it was surprisingly found that 3-10% of particles 63-90 μm and 25-40% of particles 40-63 μm results in a soft-feel and a suede look (paragraph [0005]). The Examiner states that “[p]article size distribution is a result-effective variable” thus routine optimization could allegedly be used to determine the optimal particle size (Office Action, page 9). However, it would not be obvious to have two different particle size ranges as claimed in view of the undesirability of this in Aoyama. A person skilled in the art, aiming to improve upon the results of Aoyama, would be motivated by Aoyama to provide particles having an average particle diameter within the most preferred range (i.e. 5 to 50 μm) and to process those particles - by sieving and the like - such that their particle size distribution is constrained very *narrowly* about that average particle diameter. The skilled person would not therefore be led to the particle size distribution of present claim 1.

Although Aoyama discloses that particles may be pigment (Column 9, lines 23-30), there is no *explicit* disclosure of the amount of pigment or dye which may be included in those pigmented particles. Arguably, it is implicit that the amount of pigment is negligible. In column 12, lines 39 to 47 which details the application of the particles, coloration of coatings is not mentioned: Delustering is distinct from coloration and the remaining listed functions of the particles listed in that passage are structural. Moreover, Example 1-10 contains less than 3 wt.% pigment. In Example 1-11 of Aoyama, the titanium dioxide is added at 10 parts to 80 parts of the mixture *prior* to radical polymerization. But the Example is silent on the encapsulation efficiency of the pigment as that radical polymerization proceeds and therefore nothing can be determined about the amount of titanium dioxide in the eventual particles.

Thus, Bolton and Aoyama fail to disclose all the limitations of claim 1, and the claims dependent therefrom. Furthermore, there is no teaching, suggestion, or motivation to combine Bolton with Aoyama. Since Bolton is directed to providing a wood-grain appearance, it would go against the teaching of Bolton to have a leatherlike or velvetlike appearance. Thus, it would not be obvious to one of ordinary skill in the art to use the particles of Aoyama in the process of Bolton.

Claims 2 and 12 are rejected under 35 USC 103(a) as allegedly obvious over Bolton and Aoyama in view of JP 2000/256970 to Makimura et al. (“Makimura”). As discussed above, neither Bolton or Aoyama disclose an emulsion paint comprising spherical pre-pigmented polymer particles with the claimed particle size distribution or a first coating of a water-borne emulsion of styrene acrylic copolymer. Makimura does not cure these deficiencies. Thus, Bolton, Aoyama and Makimura fail to disclose all the limitations of claims 2 and 12.

Claim 5 is rejected under 35 USC 103(a) as allegedly obvious over Bolton in view of Aoyama in view of US 2004/0158949 to Booth et al. (“Booth”). As discussed above, neither Bolton or Aoyama disclose an emulsion paint comprising spherical pre-pigmented polymer particles with the claimed particle size distribution or a first coating of a water-borne emulsion of styrene acrylic copolymer. Booth does not cure these deficiencies. The feature of claim 5 does not follow from an obvious adaptation of the teaching of Bolton, as suggested by the Examiner. Column 8, lines 46 to 48 of Bolton states that the layer 2# may be applied by “applicators such as a brush, cloth, scraper, sponge or combination device, or a spray”. Certainly the person skilled in the art might consider alternative applicators to those explicitly listed but only alternatives which can meet the need to apply the coating layer *sparingly* (column 4, line 60). A roller is clearly inappropriate for such *sparing* application of the coating. Thus, Bolton, Aoyama and Booth fail to disclose all the limitations of claim 5.

Claims 7-10 are rejected under 35 USC 103(a) as allegedly obvious over Aoyama. As discussed above, Aoyama fails to disclose an emulsion paint comprising spherical pre-pigmented polymer particles with the claimed particle size distribution. Thus, Aoyama fails to disclose or suggest all the limitations of claim 7, and claims 8-10 dependent therefrom.

Claim 11 is rejected under 35 USC 103(a) as allegedly obvious over Aoyama in view of McGeary (“Paintings by Dennis McGeary”). As discussed above, Aoyama fails to disclose an emulsion paint comprising spherical pre-pigmented polymer particles with the claimed particle size distribution or a first coating of a water-borne emulsion of styrene acrylic copolymer. McGeary does not cure these deficiencies. Thus, Aoyama and McGeary fail to disclose all the limitations of claim 11.

Claim 13 is rejected under 35 USC 103(a) as allegedly obvious over Bolton, Aoyama and Makimura in view of Booth. As discussed above, neither Bolton, Aoyama or Makimura disclose an emulsion paint comprising spherical pre-pigmented polymer particles with the claimed particle size distribution or a first coating of a water-borne emulsion of styrene acrylic copolymer. Booth does not cure these deficiencies. Thus, Bolton, Aoyama, Makimura and Booth fail to disclose all the limitations of claim 13.

Claim 14 is rejected under 35 USC 103(a) as allegedly obvious over Bolton, Aoyama, Makimura, and Booth in view of US 2004/0091704 to Weihrauch et al. (“Weihrauch”) in further view of US 6478,925 to Edwards et al. (“Edwards”). As discussed above, neither Bolton, Aoyama, Makimura or Booth disclose an emulsion paint comprising spherical pre-pigmented polymer particles with the claimed particle size distribution or a first coating of a water-borne emulsion of styrene acrylic copolymer. Neither Weihrauch or Edwards cure these deficiencies. Thus, Bolton, Aoyama, Makimura, Booth, Weihrauch and Edwards fail to disclose all the limitations of claim 14.

Claim 15 is rejected under 35 USC 103(a) as allegedly obvious over Bolton, Aoyama and Booth in view of Weihrauch. As discussed above, neither Bolton, Aoyama, Makimura or Booth disclose an emulsion paint comprising spherical pre-pigmented polymer particles with the claimed particle size distribution or a first coating of a water-borne emulsion of styrene acrylic copolymer. Weihrauch does not cure these deficiencies. Thus, Bolton, Aoyama, Makimura, Booth, and Weihrauch fail to disclose all the limitations of claim 15.

Conclusion

Although no fees are believed to be due, the Office may charge any additional fees required, or credit any overpayments, to Deposit Account No. 11-0600.

The Examiner is invited to contact the undersigned at 202-220-4200 to discuss any matter regarding this application.

Respectfully submitted,
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